

WHAT IS CLAIMED IS:

5           1.       An FM-CW radar system which frequency-modulates a voltage-controlled oscillator by applying thereto a modulating signal from a modulating signal generator, and which transmits a frequency-modulated wave by time division ON-OFF control and receives a reflected wave by time division ON-OFF control, wherein

10                       said system includes means for varying a frequency used to perform said time division ON-OFF control, and means for discriminating a signal component varying in response to the variation of said frequency, thereby discriminating a signal related to a target object from other  
15           signals.

          2.   An FM-CW radar system as claimed in claim 1, wherein said time division ON-OFF control is performed either when transmitting or when receiving.

          3.   An FM-CW radar system as claimed in claim 1, wherein  
20           said modulating signal is a signal in the form of a triangular wave, and said means for varying said transmission/reception switching frequency varies said frequency for each pair of upward and downward slopes of said triangular wave or every plurality of said pairs.

25           4.   An FM-CW radar system as claimed in claim 1, wherein said modulating signal is a signal in the form of a triangular wave, and said means for varying said transmission/reception switching frequency varies said frequency for each of upward and downward slopes of said triangular wave.

30           5.   An FM-CW radar system as claimed in claim 1, wherein said means for varying said transmission/reception switching frequency switches said frequency randomly.

          6.   An FM-CW radar system which frequency-modulates a voltage-controlled oscillator by applying thereto a modulating  
35           signal from a modulating signal generator, and which transmits

a frequency-modulated wave and receives a reflected wave,  
wherein

5                   said system is of a single-antenna type which  
switches between transmission and reception by time division,  
and includes means for varying a frequency used for said  
transmission/reception switching, and means for discriminating  
a signal component varying in response to the variation of  
10       said frequency, thereby discriminating a signal related to a  
target object from other signals.

7. An FM-CW radar system as claimed in claim 6, wherein  
said modulating signal is a signal in the form of a triangular  
wave, and said means for varying said transmission/reception  
15       switching frequency varies said frequency for each pair of  
upward and downward slopes of said triangular wave or every  
plurality of said pairs.

8. An FM-CW radar system as claimed in claim 6, wherein  
said modulating signal is a signal in the form of a triangular  
20       wave, and said means for varying said transmission/reception  
switching frequency varies said frequency for each of upward  
and downward slopes of said triangular wave.

9. An FM-CW radar system as claimed in claim 6, wherein  
said means for varying said transmission/reception switching  
25       frequency switches said frequency randomly.

10. A heterodyne FM-CW radar system which frequency-  
modulates a voltage-controlled oscillator by applying thereto  
a modulating signal from a modulating signal generator, and  
which transmits a frequency-modulated wave and receives a  
30       reflected wave, wherein

                  said system includes means for varying the  
frequency of a downconverting signal (IF signal), and means  
for discriminating a signal that varies in response to the  
variation of the frequency of said IF signal when said  
35       frequency is varied, thereby enabling a signal related to a

target object from being discriminated from other signals.

5       11. A heterodyne FM-CW radar system as claimed in claim 10, wherein said modulating signal is a signal in the form of a triangular wave, and said means for varying the frequency of said IF signal varies said frequency for each pair of upward and downward slopes of said triangular wave or every plurality of said pairs.

10       12. A heterodyne FM-CW radar system as claimed in claim 10, wherein said modulating signal is a signal in the form of a triangular wave, and said means for varying the frequency of said IF signal varies said frequency for each of upward and downward slopes of said triangular wave.

15       13. An FM-CW radar system which frequency-modulates a voltage-controlled oscillator by applying thereto a modulating signal from a modulating signal generator, and which transmits a frequency-modulated wave by time division ON-OFF control and receives a reflected wave by time division ON-OFF control,  
20       wherein

              said system includes means for varying a pattern of said time division ON-OFF control, thereby suppressing signal generation due to targets other than a target object.

25       14. An FM-CW radar system as claimed in claim 13, wherein said pattern includes a prescribed OFF period.

              15. An FM-CW radar system which frequency-modulates a voltage-controlled oscillator by applying thereto a modulating signal from a modulating signal generator, and which transmits  
30       a frequency-modulated wave and receives a reflected wave, wherein

              said system is of a single-antenna type which switches between transmission and reception by time division, and includes means for varying a pattern of a frequency used  
35       for said transmission/reception switching, thereby suppressing

signal generation due to targets other than a target object.

16. An FM-CW radar system as claimed in claim 15,  
5       wherein said pattern includes a prescribed OFF period.

17. An FM-CW radar system which frequency-modulates a  
voltage-controlled oscillator by applying thereto a modulating  
signal from a modulating signal generator, and which transmits  
a frequency-modulated wave and receives a reflected wave,  
10       wherein

              said system includes means for making said  
frequency modulation vary nonlinearly and means for  
discriminating a frequency distribution of a received signal,  
and discriminates a target object based on said discriminated  
15       frequency distribution.

18. An FM-CW radar system as claimed in claim 17, wherein  
said frequency modulation varies nonlinearly in the form of an  
arc.